

ABSTRACT OF THE DISCLOSURE

Recovery from peripheral nerve and nerve plexus injuries is usually slow and incomplete because the regenerating motor axons often head erroneously toward sensory receptors rather than muscle fibers and because the target muscles atrophy while waiting for the slow process of reinnervation. Research has suggested that electrical stimulation with different waveforms and temporal patterns at different times during the regeneration process might improve the clinical outcome through various mechanisms, but a practical means to deliver such stimulation has been lacking. This invention teaches the use of miniature electrical stimulators that can be implanted alongside the injured nerve(s) at the time of surgical repair and that can be powered and controlled by transmission of radiofrequency energy from outside the body so as to provide a variety of electrical stimuli at different times during the recovery process.